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ABSTRACT

Research for Better Schools (RBS) is supporting improvement efforts in Delaware, New Jersey, and Pennsylvania. One form of this support is RBS's participation in collaborative projects to develop a system-wide, research-utilization approach to the improvement of basic skills instruction. Educational systems following the approach employ a staff development program that enhances the ability of teachers and supervisors to use classroom research findings to improve instruction. Improvements are determined accoring to the process needs of individually diagnosed classrooms. The main elements of the approach are designed to address problems that tend to prevent practitioner's use of research, such as: low utility of research for classroom use: limited knowledge of teachers in using research findings: difficulty in reaching all classrooms with an effective improvement approach: and the limited means of educational systems for data-based guidance of their instructional improvement efforts. The main elements of the model are (1) a four-phase instructional improvement cycle: (2) a strategy for collaborative implementation/support of the cycle in use: (3) an evaluation design for determining effectiveness of the approach: and (4) the staff development program, designed to develop the ability to effectively use all elements of the approach. (Author/GSK)

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A BASIC SKILLS INSTRUCTIONAL IMPROVEMENT PROGRAM: AN OVERVIEW

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Introduction

Research for Better Schools, Inc. (RBS), a regional educational laboratory located in Philadelphia, is actively supporting the school improvement efforts that have been launched by educational systems in Delaware, New Jersey, and Pennsylvania. One form of this support is RBS's participation in a number of collaborative projects especially concerned with raising the level of students' basic skills achievement. These projects, which endeavor to include representation from state, regional, and local educational agencies, are developing a systemwide, research-utilization approach to the improvement of basic skills instruction and, ultimately, students' achievement.

Educational systems that follow the approach employ a staff development program that enhances the ability of teachers and supervisors to use classroom research findings to improve instruction. Improvements are determined differentially according to the process needs of individually diagnosed classrooms. The main elements of the approach are: (1) a four-phase instructional improvement cycle, (2) a strategy for collaborative implementation and support of the improvement cycle in use, (3) an evaluation design for determining the effectiveness and impact of the implemented approach, and (4) the staff development program itself, which is designed to develop in staff the ability to use effectively all the elements of the approach.

RBS's role in these development projects includes the functions of initial conceptualization and development of the methods, procedures, and materials of the approach. Collaborating educational agencies and personnel contribute to the planning and development of the elements of the approach, as well as provide the crucial field testing and feedback to guide its revisions. RBS also provides field support to its educator partners as they engage in these activities.

The purpose of this paper is to provide a brief overview of the approach and its development. The emphases here are on concepts and main ideas that are shaping the approach and guiding its development. The main elements of the approach are discussed in much greater detail in other papers: the four-phase instructional improvement cycle is reported by Huitt and Rim (1980), the strategy for collaborative implementation and the staff development program for the approach are described by Graeber (1980), and the evaluation design is explained by Rim and Segars (1980).

This overview is organized into sections covering the objective and perspectives that have shaped the conceptualization and development of the basic skills instructional improvement approach, the approach itself and its development, results of the work to date, and the potential significance of this effort.

Objective and Perspectives

The collaborative endeavor of RBS and its educator partners described in this paper is a deliberate attempt to provide teachers and supervisors with the means of increasing assurance that the conditions and processes of basic skills instruction reasonably reflect the implications of research on the topic. In other words, the objective of this effort is to make research on classroom instruction pay off for education by facilitating its effects upon education in some of the ways noted by Short (1973). These include increasing understanding of the research among practitioners, providing indicators of research's probable usefulness under specific conditions, and incorporating research findings into technological developments suited to the practitioners' problems.

The ways and means being pursued in the interest of achieving this objective and, indeed, of ameliorating the "practitioners' problems " have been shaped in large measure by RBS's perspectives on the current educational scene, on the use of classroom research for improving instruction, and on the use of research on educational change to foster greater local use of research findings to improve basic skills instruction. Although the perspectives to be described are those of RBS, their repeated exposure to educational administrators and teachers has not elicited objections or very different views. The order in which the perspectives are treated is deliberate so that the discussions, read sequentially, reveal a relatedness and a logic of the whole--an initial version of a rationale for the basic skills instructional improvement approach described in this paper.

Perspective on the Current Educational Scene

The education systems in the middle Atlantic region, as elsewhere in the nation, have perceived themselves to be (or about to be) under pressure from many sources to assure that every student attains at least an acceptable minimum level of basic skills achievement. Although the operational definitions of minimum achievement levels vary across systems, the rationale for these standards usually makes some reference to the literacy that responsible behavior requires of "good" citizens.

Educators in this region--as in many other regions--have responded to this pressure by launching school improvement programs. Differences exist among these programs, but they are mostly differences in the degree to which they are legally supported and in the nature and timing of their implementations rather than differences in the concepts and intentions that have given them form.

Typically, these school improvement programs are given overall leadership by state departments of education. Most follow an accountability/planning model of the type depicted in Figure 1, although this may be done informally. They all feature goal setting; frequently, statements of expectation for students' basic skills achievement are included. Assessment of students' actual achievement also is called for, and norm-referenced, standardized tests almost always are used for making assessments, although criterion-referenced competency tests are becoming increasingly popular. In some cases, both kinds of tests are used.

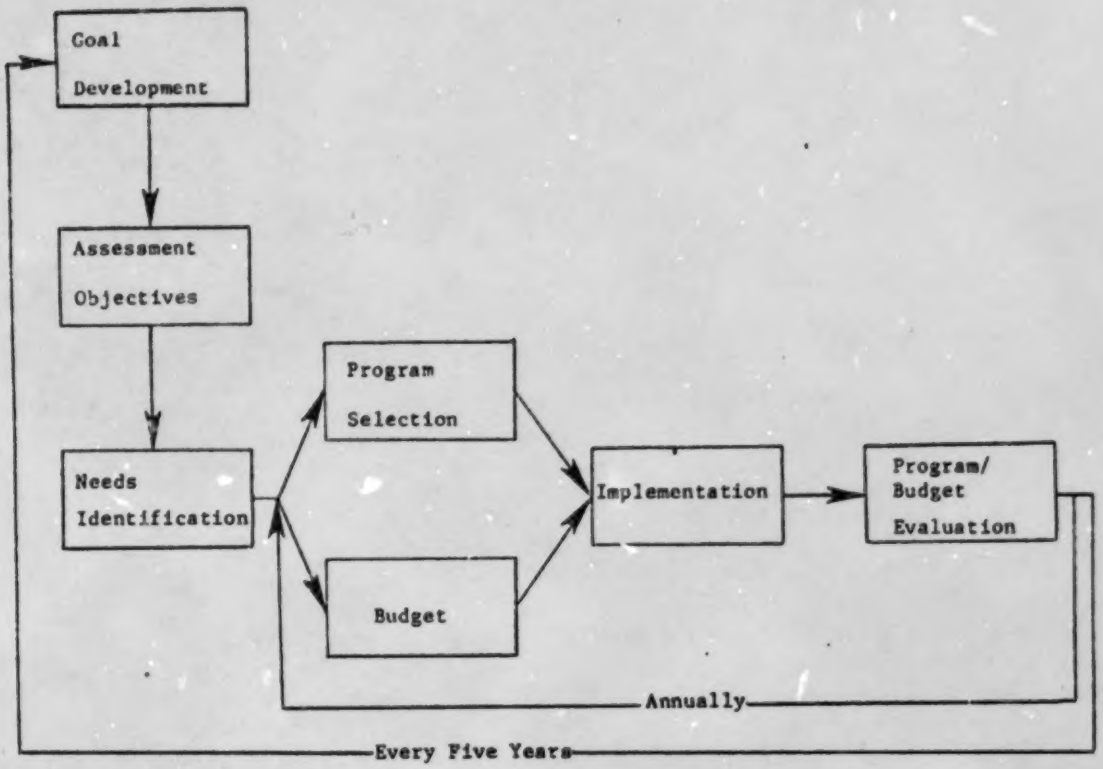

Figure 1. General planning model (State of New Jersey, 1976).

The concept of accountability inherent in these school improvement efforts calls next for comparative analyses of students' actual achievement versus expectations that have been stipulated. Shortfalls of achievement (below standards) signal achievement needs of students. This kind of needs analysis is intended to identify not only low-scoring students but also classrooms, schools, and districts that need to give special help to students as they attempt to improve their achievement in designated subject areas.

The logic of the school improvement efforts and, more specifically, the accountability/planning model concepts central to these efforts require that the responsible education agencies take measures to meet the achievement needs of their students and thereby remove the observed discrepancies between assessed performances and standards of expectation. The assumption seems to be implicit that, given the identification of students and the nature of their achievement needs, supervisors and teachers possess in their repertoire the knowledge and skills necessary to diagnose reliably the educational causes of achievement discrepancies and to provide program modifications that will effect the necessary improvements to instruction and achievement. State departments of education and regional and local educational agencies have responsibility for assisting program modification efforts. Assistance from helping agencies usually consists of mailings of program improvement literature, occasional workshops, encouragment of teachers to enroll in professional improvement courses at colleges and universities, and visits to some schools by technical assistance consultants.

The remaining features of the school improvement programs may include provisions for budgeting adjustments and evaluation and revision of the school improvement effort itself. School improvement frequently embraces many dimensions of the school besides students' achievement; basic skills achievement of students, however, is nearly always a prime concern of school improvement programs. An approach to improving basic skills instruction and, subsequently, students' achievement is the special interest of this paper.

The accountability/planning model process of the school improvement efforts seems effectively to identify areas of needed improvement in student achievement and the districts and schools from which program improvements will be expected. But the accountability/planning model process does not (nor was it intended to) identify the classroom conditions and/or processes that were related directly to the shortfall in students' achievement. Nor does the process signal the number and kinds of program modifications that need to be made to effect improvements in the achievement of targeted students. But, again, the process was not designed for these purposes.

The fact is, accountability systems aside, no reliable methods and procedures have existed that teachers and supervisors can use for relating the critical dimensions of classrooms to students' achievement. Without this capability, it is not easy to identify reliably the probable classroom causes of students' achievement deficiencies. It follows thus that there has not been a reliable basis for specifying modifications of classroom conditions and/or processes that will lead to improved student achievement. Indeed, data-based knowledge of the relationships between classroom variables and students' achievement, upon which reliable diagnosis and treatment could rest, has begun to emerge only in recent years from the work of researchers. From RBS's perspective, assistance to educational systems that will aid them to use the available research to locate classroom processes in need of modification and to give these processes appropriate treatment is among the more important services that the R&D community can render to

practitioners at this time. This is one of the principal perspectives that led RBS to its participation in the development of the instructional improvement approach described later in the paper.

Perspectives on the Use of Classroom Research to Improve Instruction

Research findings relating classroom variables to students' achievement are now more generally available. Research studies report both quantitative and qualitative findings. The quantitative findings, particulary those referred to as process-product findings, are currently of most interest to the improvement projects with which RBS is collaborating. The current attractiveness of the process-product research is found in the volume of findings, the wide areas of consenus among findings of various studies, and the amenability of the collected data for use in diagnostic procedures designed to identify improvement opportunities in classrooms.

The process-product research has been reviewed extensively elsewhere (e.g., Medley, 1977; Rosenshine, 1976), and no such review is needed here. Although process-product findings do not provide conclusive evidence to account for variance in students' achievement, they do suggest strong relationships between some classroom processes and achievement. Educators pressed to improve instruction and achievement may be unable or unwilling to await more conclusive evidence. To those who counsel waiting for more definitive results before doing anything, Medley (1977) offers the following observations.

> The argument seems to be that if you don't do anything, you can't do any harm. Since we do not yet have a full and complete understanding of the dynamics of effective teaching, we are expected to ignore the imperfect knowledge that we do possess and do nothing that requires such knowledge.
>
> How fortunate it is for the human race that at least some of our ancestors did not subscribe to this position. If Columbus had waited until he had a complete and accurate map of the world before setting sail, his little fleet would still be sitting in Genoa.
>
> Very few decisions worth making can be put off until there is adequate information to base them on. In medicine, and poker, most actions must be taken, most decisions made, on insufficient data. Patients die, and money is lost, because action is taken when data are inadequate--but more patients and more money would be lost if no action were taken at all. (p. 3)

RBS agrees with Medley. From its perspective, the time to do something with this research is now. Research does not always translate naturally, directly, or easily into improved classroom practices, however. So, it is also RBS's view that a reasonable beginning to an appropriate use of the research can be the planning and development of methods, procedures, and materials to facilitate deliberate utilization.

Research may be used in different ways to improve basic skills instruction. For instance, researchers may synthesize a set of universal teaching prescriptions based upon the inferences they have drawn from their analyses of the research. These prescriptions are then incorporated into preservice and inservice courses of instruction for teachers. Typically, the prescriptions do not recognize that classrooms differ, nor do they provide teacher options to be used selectively when conditions may favor one option over another. Gage (1978) has written extensively on this approach to instructional

improvement. Good (1978) has shown that teachers who have been trained in this way performed mostly in the specified manner, at least under the controlled conditions of an experimental study. Moreover, when teachers did perform as directed, their students' achievement increased more than did that of teachers who did not perform in the prescribed manner.

Many people now recognize, however, that differences in classroom processes discriminate one classroom from another, just as students and teachers are differentiated from their peers by the uniqueness of their behavior. In addition, differences in classroom processes frequently correspond to the differences in achievement among the same classrooms. This suggests that research may be used more effectively to improve instruction if the use is selective and controlled, according to the needs of individual classrooms. The importance of addressing key context differences is emphasized by Jamison, Suppes, and Wells (1974) and Wittrock (1970), among others.

A second way of utilizing research for instructional improvement requires that trained observers systematically observe teachers and their students in their classrooms. Subsequently, in clinical sessions, the teacher receives information on her/his performance and opportunities for improvement. Advice to the teacher is subjective in nature and based upon the adviser's understanding of the observations of the teacher's classroom and the implications of the research for such classrooms. More

often than not, advice to the teacher encourages greater attention to whatever variables the adviser believes are most important. It is likely that recommendations will stress more of a variable when that variable is related positively to students' achievement and less when it is related negatively to achievement. Berliner et al. (1976) and Coker (1978) provide descriptions of research utilization work done in this way.

Important implications of both the school improvement programs and the research on classroom processes indicate that another way of using research for instructional improvement is needed. One concern is that in states with large numbers of low-SES children the accountability/planning model process will designate many districts, schools, and teachers who will be expected to improve basic skills instruction. Indeed, the number of classrooms involved may exceed by far the ability of helping agencies to provide trained classroom observers, or any other technical assistance directly to classrooms, on a continuing basis.

Studies by Brophy and Evertson (1974), Rim and Coller (1978), and Soar and Soar (1976) make clear that the relationships between classroom processes and students' achievement are not always linear. This finding raises a second concern -- about the universality of standard teaching prescription. With certain nonlinear relationships (the inverted U, for example), a standard prescription of "more" may be appropriate for classrooms in the low range of the scale for the process variable, but the same prescription may be very inappropriate, or even harmful, for classrooms in other locations along the scale for the same variable.

What seems to be needed is a third way of using research to improve instruction that develops the ability of personnel at the regional, district, school, and classroom levels to use research findings to identify and exploit instructional improvement opportunities as they occur in individual classrooms, and a way of training others to do likewise. Certainly, this approach would require supervisors and teachers to be decision makers and problem solvers. Many people, including RBS, share the perspective that supervision and teaching comprise precisely these activities (e.g., Fenstermacher, 1979; McDonald, 1977; Rubin, 1971, 1978). In this view, translated forms of the research and the methods developed for this third way of approaching instructional improvement will be more effective to the extent that they facilitate the decision-making and problem-solving activities of supervisors and teachers as they seek to improve basic skills instruction classroom by classroom. The instructional improvement approach under development by RBS and its project partners is designed specifically to reflect the perspective of this third way of using research for instructional improvement. That is, the approach facilitates local utilization of research to aid decision-making and problem-solving activities directed to the improvement of instruction according to the needs of individual classrooms.

Perspectives and Research on Educational Change to Foster Change

According to Clifford (1973) research affects practice through a process of gradual permeation of the educational milieu. Not everyone has been content to accept the pace of educational improvement set by the

rate with which new research permeates the consciousness of professional educators. Short (1973) provides an extensive review of the ways that change efforts have sought to reduce the research-practice lag. Shaping technologies for practitioners' use according to the findings of educational research has been one the the more promising ways for achieving early infusion of research into practice. It is a perspective of RBS that research on the educational change process itself can be used to hasten and make more effective the whole transfer process.

If educational innovations are intrinsically unworkable, for whatever reasons, it is obvious that they are not likely to foster effective improvements of practice. But even powerful aids to practice are not likely to work their good effects unless they are implemented by willing users (Berman & McLaughlin, 1975; Fullan & Pomfret, 1977; Sieber, Louis, & Metzger, 1972). Havelock (1973) has observed that an important pre-conditions for willing users is their perception of a problem, as well as its potential solution.

Pincus (1974) has noted the absence of a "bottom-line" incentive for educators, comparable to the profit motive in the business world. As a result, educators frequently perceive their problems from organizational and/or personal career biases that do not necessarily relate to students' achievement. Thus, whatever innovations are in vogue at the moment tend to capture the interest of the "innovative" administrator, regardless of any evidence of effectiveness.

RBS perceives that the emerging use of the accountability/needs analysis process may elevate concern among educators about students' achievement to the level of concern business persons have about profits. In this case, potential users may be more sensitive not only to the problem of low achievment but also to the demonstrated effectiveness, or promise at least, of innovations designed to help raise achievement. Havelock (1973) and Zaltman, Florio, and Sikorski (1977), among others, stress the importance of awareness activities to foster understanding of the needs addressed by innovations and the likely benefits from their use.

Awareness of problems and benefits is necessary but probably not sufficient, however, to motivate educators to adopt and/or implement educational innovations effectively. They may be reluctant to implement the solution, or they may implement it poorly, unless they understand and accept the solution in all its detail and unless they understand and accept the degree of change the innovation requires of them. There is much research to support this view (e.g., Fullan & Pomfret, 1977; Berman & McLaughlin, 1975; Emrick & Peterson, 1977; Center for New Schools, 1977; Stearns & Norwood, 1977).

Even an awareness of problems and an understanding and acceptance of the solutions and the changes they require of users may not be sufficient to assure implementation of a proposed solution. Participation of local users in the formulation of the innovation itself appears to be a necessary ingredient of educational change, according to the Rand studies (Berman & McLaughlin, 1975). In this view, educational change is really mutual adaptation (i.e., the innovation and its user environment adapt each other to their respective needs).

Fullan and Pomfret (1977) confess that there are relatively few studies on the relationship between user participation in the development of innovations and the quality of implementation. They are nevertheless convinced that user participation is critical. Indeed, participation should include users in the development process itself as well as in the decision making that guides development. These reviewers recommend that the mutual adaptation perspective be the approach to policy reform at both the national and local levels.

Given favorable circumstances with respect to all the conditions described here, the possibility for failure of an innovation remains high. In addition to knowledge, acceptance, and participation as important conditions for successful implementation, it also appears that intensive inservice for users (Cole, 1971; Hamingson, 1973), resource support for change (Berman & Pauly, 1975; Downey and Associates, 1975), and feedback mechanisms (Charters & Pellegrin, 1973; Gross, Giacquinta, & Bernstein, 1971) are all probably needed to foster the successful use of innovations.

And, finally, the characteristics of the user environment may determine the degree to which activities to facilitate innovation will be successful. Pincus and Williams (1979) list five factors of a supportive environment that innovators, on occasion, may assume incorrectly to be supporting their intended changes. The fact is, the degree to which these factors are strongly represented on behalf of any change

varies across users. The factors are: zone of protective tolerance for change, leadership, appropriate planning and delivery system, method for determining benefits, and a capacity to maintain stability of operations and innovations.

The perspectives and the research that have been discussed here make clear that the degree to which innovation is implemented correctly and effectively (assuming the potency of the innovation) is an outcome of the interaction between the user's environment and the innovation including the process for its implementation. These two dimensions, innovation and user environment, are displayed in Figure 2 along with a third dimension representing the levels of the user environment. RBS perceives the user to be an educational system rather than simply one or more of its included schools.

These are the main perspectives and research on educational change that have been used by RBS in shaping strategies for the development, implementation, and dissemination of a research-based approach to instructional improvement. Change strategies may be thought to fill one or more of the smaller cubes that are at the conjunctions of the three dimensions in Figure 2. The strategies are the subjects of a later section of this paper.

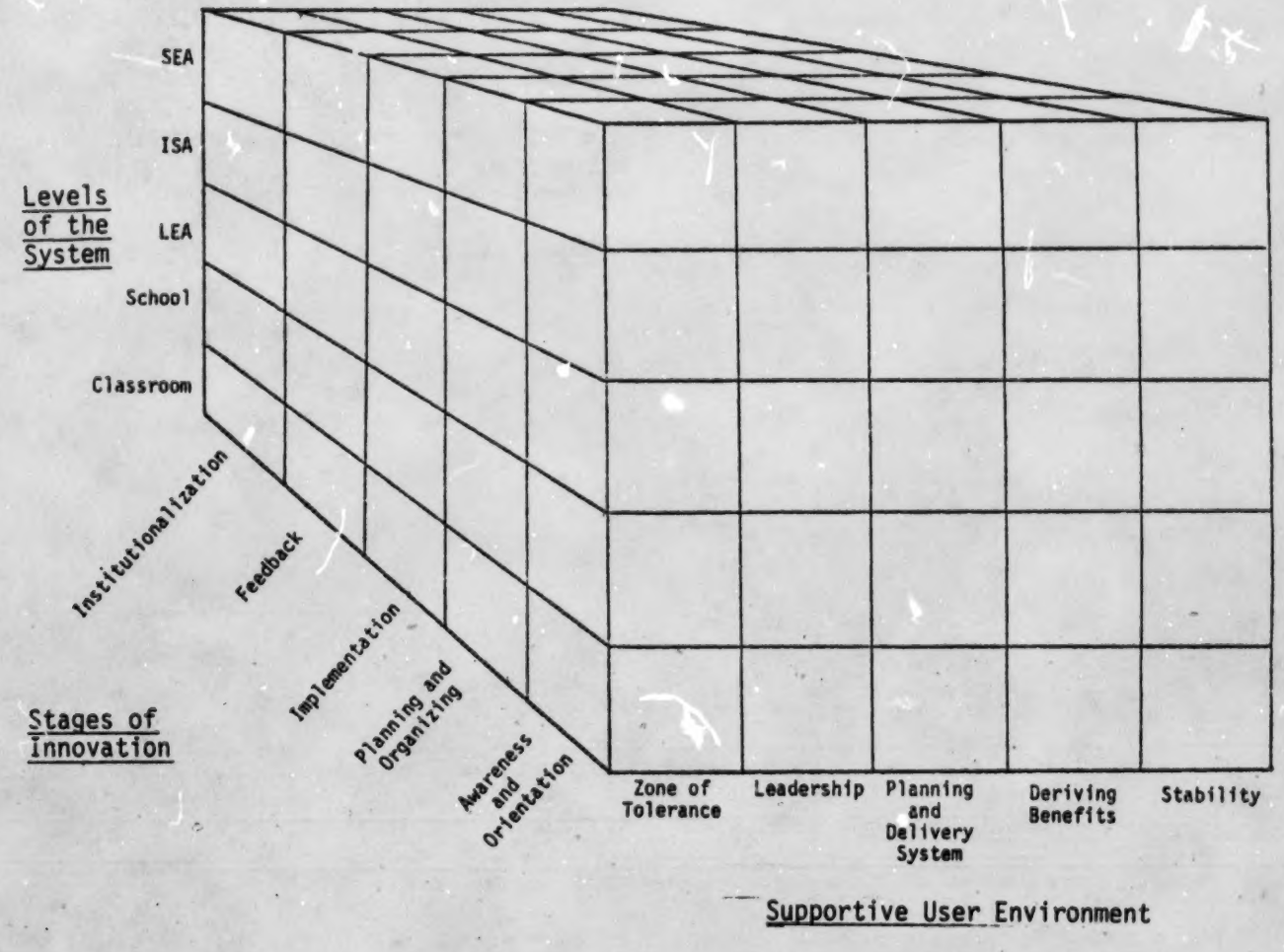

Figure 2. Perspectives on educational change.

A Research-Utilization Approach to Basic Skills Instructional Improvement

The discussions of this section are organized by headings that represent one or more main elements of the basic skills instructional improvement approach. The elements are designed to address problems that tend to retard or prevent practitioners' effective use of research to improve instruction. These problems include the low utility for classroom use of research findings as they are reported by investigators, the limited knowledge and skill of many teachers and supervisors in using research findings to improve instruction, the difficulty of reaching all classrooms in the educational systems with an effective improvement approach, and the limited means of educational systems for data-based guidance of their instructional improvement efforts.

Four-Phase Instructional Improvement Cycle

Research findings, as they are reported by investigators, are not readily accessible to practitioners, are not easily understood by people unaccustomed to reading and analyzing research, and typically are not accompanied by methods designed for their systematic and effective application in classrooms. Of course, reviewers of the research help to make the findings more accessible and more understandable in a general way. But reviews can not describe the level of processes operating in specific classrooms, nor do they tell teachers and supervisors how to prepare their own reliable classroom descriptions and identify their own improvement opportunities.

RBS is undertaking to make the research findings more accessible and more understandable by identifying among the many variables that have been researched a few that seem to have special utility for an instructional improvement approach. Content, data, and management information for these variables are adapted from selected studies in order to be brought to the special attention of practitioners. Variables currently receiving materials development attention are student engaged time (SET), prior learning (PL), and criterion-relevant instruction (CRI). It is anticipated that these may be joined by quality of instruction and student success rate. Although no conclusive argument has been made for the dominance of these or similar variables, there seems to be tacit agreement among many researchers and reviewers that those listed here are of particular importance (e.g., Rosenshine & Berliner, 1978; Bloom, 1976; Cooley & Leinhardt, 2980; McDonald & Elias, 1976; Medley, 1977; Rosenshine, 1976; Soar & Soar, 1973). RBS has not encountered any serious objection to the special focus they are accorded in the instructional improvement approach.

In any event, RBS perceives that the greater value of the improvement approach will be found in the simple but systematic control it provides to practitioners as they use research findings to improve instruction. Although the focus variables that receive full-cycle attention in the approach at this time are those noted above, it is not imperative that they be precisely these variables or that they be of ultimate importance to students' achievement in order to be useful in the full-cycle role. It is anticipated that researchers will from time

to time identify new variables important enough to supplement or replace current selection. The criteria for their use with the imporvement cycle likely will remain the same as for current selections (i.e., significant relationship with students' achievement, proximity to the teaching/learning action, manipulability in classrooms, and availability of their measurement data).

The four-phase instructional improvement cycle is the central feature of the improvement approach; it is this strategy that provides teachers and supervisors with specific and easily managed control over their use of research findings to improve instruction. The cycle, which is depicted in Figure 3, is a simple adaptation of a traditional problem-solving paradigm. In Phase I, educators collect information on classroom achievement and classroom processes. In Phase II, they compare their process data with process/achievement functions (prepared from data collected in research studies) and identify their improvement opportunities. In Phase III, they decide and prepare selected classroom modifications to exploit their opportunities. In Phase IV, the classroom modifications are implemented and monitored to assure they are in place and operating before another round of information collection is begun in Phase I.

Given the iterative use of the cycle and the nature of Phases I and II, it is apparent that evaluating the effects of classroom modifications is intrinsic to the approach. No additional provisions for the evaluation of classroom effects are needed.

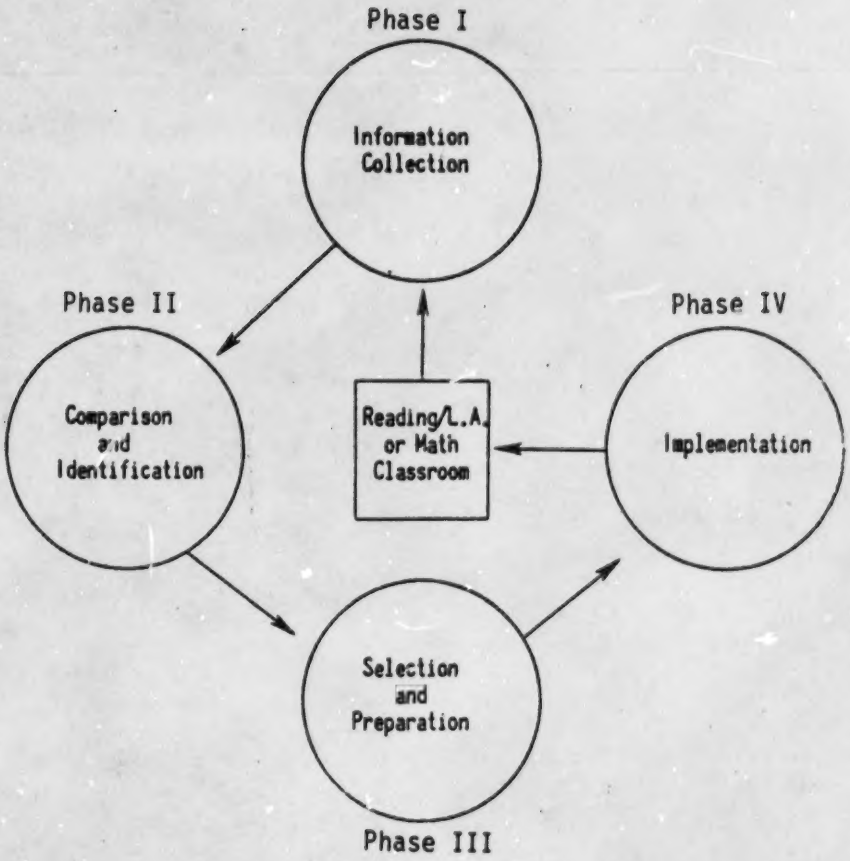

Figure 3. Four-phase instructional improvement cycle.

Special mention should be made of the hypothesis behind the selection and preparation of classroom modifications in Phase III. Although the focus variables noted above are intended to receive full-cycle attention, it is in Phase III that all other classroom variables also become candidates for use in the improvement process. It is hypothesized that focus variables frequently will not be adjustable by direct action but mostly will need to be levered through manipulation of related classroom variables. For example, inducing students to increase their

academic motivation as a Phase III strategy for some classrooms may be the surest avenue to increasing student engaged time, a focus variable. Phase III variables are at least as important to students' achievement as are the variables selected for initial and extended attention, only more remote. And their effects most likely are mediated by one or more focus variables.

RBS also recognizes the interrelationship of the variables selected for full-cycle attention. However reasonable plans may be for improving instruction along a dimension represented by a focus variable, the effect upon students' achievement of manipulating this single variable likely will be moderated by other focus variables. For example, radically increasing the amount of time students are engaged in their study of content may have very little effect on their achievement. They may have had insufficient prior learning to make their current study effective, or if the content they study is poorly represented in the criterion instrument, their instruction will have low criterion relevance. Prior learning and criterion relevance, both focus variables, are strongly and positively associated with students' achievement. Low support from these variables certainly will inhibit the positive effects on achievement of increasing student engaged time.

For these reasons, the development effort intends that the instructional improvement approach shall include a simple system for managing the cluster of focus variables so that they may be sustained in their respective optimum ranges and students' achievement may be maximized.

Users of the improvement cycle eventually may provide data on the achievement effects of the cluster of variables when each variable is in its optimum range. This is a happy prospect, as there is meager evidence of this kind at present.

Huitt and Rim (1980) provide more detailed explanations of the improvement cycle materials and procedures. They also give more attention to the development process and to the contributions of RBS's educator/developer partners.

Educational Change Strategy and Staff Development

Earlier the point was made that it is as sensible to use research on educational change in planning and implementing educational innovations as it is to use classroom research to improve basic skills instruction. Indeed, careful observance of the research on change by disseminators of classroom research may be the critical key to wide-scale and appropriate use of the latter. This section provides a brief overview of the change strategies and staff development programs that RBS and partners are developing as part of an overall approach to the improvement of basic skills instruction. The substance of this section reflects the research and perspectives on educational change that were discussed above.

RD&D. Some of the perspectives on educational change that were discussed earlier reflect one notion of a research, development, and dissemination process for bringing research into practice that was current during the 1960s, when national curriculum-development projects were prevalent. In its extreme form, this process has the researcher-developer at one end of a linear sequence of events designed to facilitate the flow of research to users at the far end of the sequence. Typically, the researcher-developer selects the problem and conceptualizes and develops the solution. Schools are expected to implement the solution according to specifications supplied by the researcher-developers. Feedback from users travels back to the researcher-developers through the sequence of agencies that delivered the innovation to the users initially.

This view of the RD&D process seems now to be out of favor in education. Research is not generally considered to have had much effect on the processes or outcomes of education during those years. Whether justly or not, some will argue that the poor performance of RD&D traces in part, at least, to the noninvolvement of users in the research and development phases of innovation. It is thought that noninvolvement deprived researcher-developers of important information that may have altered their solutions in ways conducive to greater effectiveness. Certainly, ininvolvement at least deprived some innovations of some user commitment.

Key strategies of development and dissemination. Mindful of the research finding that commitment of users is associated with their sense of ownership in the innovation (which comes largely through participation in the development process), RBS and its partners have made two related strategies the cornerstones of their development-dissemination efforts. The first strategy calls for collaboration of RBS and partners in the initial development of the improvement approach, collaboration of initial educator partners among themselves (i.e., across levels from SEA to the classroom), and collaboration of initial developers with new systems interested in developing their own similar improvement approaches. The second strategy calls for replacement of the notion of linear RD&D by a concept of successive development efforts, with earlier developments transmitting critical characteristics to later developments. Each of these strategies receives special attention below.

Collaboration. For RBS and its educational systems partners, collaboration means the joint pursuit of a common objective, mutual respect

for the competencies and responsibilities of all participants in the collaboration, and a shared commitment to trustful relations and negotiation of differences. This development effort calls for embodying in methods and materials for practitioner use the best RBS can conceive about the use of classroom research to improve instruction. The development of such methods and materials requires a variety of expertise; leadership should and does alternate among the collaborators according to the immediate need and the expertise that can serve it best.

RBS has been mostly responsible for initial conceptualizations and first approximations of methods and materials. RBS's educator partners have provided early critiques of these, have subsequently tested them in use, have recommended needed revisions, and finally, have employed the developing approach on a continuing basis. In performing its functions, RBS endeavors to confine to the smallest degree the aspects of the improvement approach that can not be adapted without violating the integrity of the approach. Educator participants respect the integrity of these narrow technical aspects but feel free to and do, at times, make substantial modifications in other areas of the approach, which are the larger areas.

For example, observation systems have been adapted carefully from research studies by RBS so that the data collected with the adapted system can be related to the findings of the study. Further adaptations of these systems may change the nature of the data collected and abridge, at least, the validity of comparisons with supposedly comparable data from the original research studies. Practitioners willingly and

earnestly have trained in the proper use of the observation system in respect to the integrity of this technical aspect of the improvement approach. Who collects these data and how they are considered vary widely across development systems, however. Some systems follow a peer observation mode, others a clinical supervisor mode. In other nontechnically related aspects of the approach, variations in practice across users are wider than this.

Turnkey development. Figure 2, which appeared above, represents graphically RBS's perception of an innovating educational system in terms of its levels of organization, the stages of innovation through which it manages its own reform and renewal, and the factors supportive of change in its environment. Each level may participate in the stages of innovation in some way, and each level of the system is characterized by more or less of each factor of a supportive environment. It was suggested that one or more of the cubes at the conjunctions of the three dimensions may be thought to contain strategies or tactics for facilitating educational change at these locations. What does not show in the figure is the pyramid shape of the educational system, which reflects the enormous increase in the number of units at successive levels below the SEA. Nor does the graphic show the hierarchical nature of the system that binds the levels together, more or less tightly, in a top-to-bottom authority structure.

Mindful again of the research on change, RBS is concerned that its partners shall have a sense of ownership in the improvement approach that has come from participation in development of the approach. RBS is also concerned that the approach shall have the widest possible impact. To

these ends, RBS has made initial overtures to the highest levels of the state educational systems to participate in collaborative turnkey-development efforts. Overtures to these levels have enlisted collaborators who can and do enlist other collaborators at the next lower level. Construing volunteerism to be a critical condition for effective collaboration, partners at each level have repeated overtures to participate in collaborative development to trusted aides or contacts at lower levels who, they expect, will wish to participate.

At this point it is important to indicate that RBS regards an alignment of agents from the SEA or ISA level to the classroom as representing an educational system. When an alignment of this type is collaborating in the development of the instructional improvement approach, RBS perceives this arrangement to be a development project. The initial systems to join with RBS in such collaboration are referred to here as initial development projects. Other projects that have been launched by initial collaborators at the SEA or ISA levels are referred to sometimes as dissemination projects, but only in the sense of dissemination as redevelopment.

The distinctions between initial development projects and "dissemination" projects need to be made clear. The initial projects include RBS as a collaborator; they perform the initial development of methods, materials, and procedures of the approach. Dissemination projects are not dissemination projects in the sense that their staffs are trained by RBS to use the methods, materials and procedures as specified, but rather they are aided by educational partners of RBS to form their own projects. They do have the advantage of having the methods and materials produced by the initial projects, and they do receive initial staff development training

from an ISA that has been trained by RBS or an SEA participant. These products and procedures of initial projects, however, are points of departure for new projects. Certainly, they are free to modify them and to adapt them according to their own needs.

It is true that the dissemination projects have not changed radically the initial approach as yet, but they know, and later dissemination projects will know, that making changes is intended to be part of the approach. The distinction between the notion of RD&D discussed earlier and this strategy for getting research into practice is subtle, but it is real and may be critical to the successful improvement of education at the local level.

It is worth repeating that RBS does caution new projects that altering the methods, materials, and processes that have been adapted directly from the research studies may violate the basis for comparing their classroom data with data from the studies. The integrity of this research-utilization approach, however, is invested in a relatively small core of technical materials and procedures, and the rest of the initially developed approach offers many opportunities for change if new projects choose to make them.

The turnkey feature of this development process is found in the role and functions of the individuals at each level of the educational systems who have received staff development training as it was prepared in the initial projects. Training for persons, other than teachers, is designed to prepare new trainers at the respective levels of the system. Once trained, each of these new trainers is now prepared to train other trainers at the same and lower levels. Because the mode of training is for the trainer to model and the trainee initially to observe and

emulate, at least a strand of the system has the approach established and operating on completion of the training. The trainer then turns the "key" over to the new trainer, who is now prepared to perform a maintenance role and to lead (train) another new collaborator to initiate another new project.

Awareness and adoption. In order for educational innovations to produce their intended benefits, it has been observed that there must be willing and understanding users of the innovations. RBS has found educator partners willing to change and to help develop both a new approach to instructional improvement and the change strategies and methods to support its use. The process RBS uses to make potential partners aware of its ideas and plans includes presentations at meetings, distribution of brochures, publication of papers and newsletters, and direct solicitation of key administrators. RBS has found awareness activities to be necessary but not sufficient to elicit a decision to participate in a development effort. In every case, regardless of the level of the system that was approached (from SEA to classroom), a decision to participate has come only after at least one orientation meeting at each level.

Orientation meetings, supported with specially prepared materials, help to make explicit for prospective partners the details of the improvement approach as they are known at the time, the extent of changes that may be required of participants, and the anticpated benefits to users. Orientation sessions nearly always arouse the interest of potential participants, and they frequently lead to decisions to participate. On other occasions, further meetings are required. These meetings may even begin organizing and planning activities for the prospective participants. Decisions to participate usually are reached early, or not at all.

Staff development program. The turnkey development strategy has been described as a process for developing the instructional improvement approach throughout an educational system and moving it from system to system. The heart of the process, at least for initial and second wave development projects, is a staff development program that offers two kinds of staff development training.

The first kind of staff development training is the same for all levels of the system. It develops the ability of trainees to use the methods, materials, and procedures prepared for each phase of the instructional improvement cycle for each focus variable.

The second kind of staff development training is designed to prepare turnkey leadership at each level of the educational system. Turnkey leaders are prepared to develop improvement cycle training leaders. Additionally, leadership development provides training in development of the factors that support educational change at each level of the system. Of course, this is intentionally a limited effort designed specifically to provide support for the instructional improvement approach that is of interest in this paper.

Another reference to Figure 2 may help to make clear that the first type of staff development focuses on the implementation of the four-phase instructional improvement cycle, which is included principally in the implementation stage of the innovation dimension. Staff development for leadership includes preparing others for the stages of innovation and for developing the environmental support dimension at all levels of the educational system. In brief, the staff development program encapsulates the

research-utilization approach to instructional improvement as it is currently conceived. Graeber (1980) writes in much greater detail about the change strategies and the staff development program.

Evaluation

The importance of feedback for guiding innovation was stressed above. Also noted was the fact that, in past years, innovators typically did not make specific provisions for implementation feedback. The leader section of the staff development program described above includes special training for leaders who will wish to evaluate the effectiveness and impact of their versions of the instructional improvement approach.

The evaluation design was prepared deliberately to serve the special concerns of educational decision makers rather than concerns that may be of interest to a development project. Given this objective, the design of the evaluation was shaped so that claims on the time, effort, and funds of the system would be minimal. To this end, the design focuses on data generated by teachers and supervisors in their use of the four-phase instructional improvement cycle.

Assuming that leaders at every level will share a need for answers to the same questions (but specific to their respective levels of responsibility), the design provides for analysis of the data by units of interest at successive levels of the systems. Teachers, for example, are concerned about the effectiveness of the approach in terms of the conditions/processes of their respective classrooms and the achievement of their students. Their use of the improvement cycle regularly provides them

with data to answer the questions: Are the processes of my classroom at optimal levels? Have I changed the processes of my classroom? Is the achievement of the students at an appropriate level? Has it changed? Principals will have similar questions and will be interested in answers classroom by classroom. The principal likely will also be interested in the persistence of teachers in the approach and in increase or decrease in the number of teachers participating. These are questions of effectiveness and impact. The evaluation design indicates that simple procedures can be used to collect and analyze the data in terms of classrooms and for the building as a whole.

Corresponding questions will be of interest at the LEA, ISA, and SEA levels; the evaluation is designed to assist leaders to secure their answers in an efficient manner. If the leadership at any level believes that effectiveness or impact is less than it should be, the evaluation design provides for a systematic investigation of potential sources of difficulty at the respective levels of the system.

Rim and Segars (1980) report on the evaluation design for the approach in much greater detail. Plans and instruments for testing the evaluation design in use are in preparation.

Results and Significance

A design for evaluating the effectiveness of the research-utiliza-tion approach to instructional improvement and the impact it may have has been developed and is described by Rim and Segars (1980) as has been previously noted. Plans are being prepared for field testing the design and the method for its intended use. It is much too early in the development of all the elements of the research-utilization approach to instructional improvement (including its evaluation element) to attempt a formal appraisal of the effectiveness and impact that the approach may be having. Nevertheless, some informal observations are in order on the status of this development effort.

Development of the approach was begun by RBS in December 1977; collaborative projects were beginning to include school districts and schools in the fall of 1978 and early 1979. Today there are collaborative development projects under way in Delaware, New Jersey, and Pennsylvania and an exploration of interest in another project in Maryland. Although SEAs have not formally endorsed the approach, nor are they likely to for a variety of reasons, they are all aware of this work. Support from SEAs varies from active participation in development in the field to informal monitoring and discussions of progress with RBS. Four ISAs, six LEAs, and nine schools are actively collaborating in the development work across the three states.

It is the opinion of RBS that the development methods and materials should be farther along before any emphasis is given to initiating second wave or turnkey dissemination projects. Some partners of RBS, however, have

sufficient confidence in their use of the approach that they are assisting the launching of new projects. At this writing, one ISA, two LEAs, and four schools are developing their own versions of the improvement approach under the guidance of initial developers other than RBS. In Maryland, SEA and Baltimore LEA personnel are participating in a limited staff development institute relative to the potential inclusion of Maryland with the states served by RBS.

The institute is seen by RBS as a device for accelerating diffusion of the instructional improvement approach. Institutes are organizational schemes for delivering staff development training to a number of leaders at the same system level at the same time. Or, an institute may include leaders and their partners from the next lower level, as well. For example, ISA leaders and their partners from LEAs interested in participation may comprise an institute. Subsequently, the trained ISA leaders hold their own institutes for other LEAs, and the trained LEA leaders hold institutes for principals in their districts.

Preparation of materials for the staff development program began 22 months ago. To date, orientation materials are the first materials to be developed and revised for the leadership element of the program. Instructional improvement cycle materials for student engaged time have been completed, tested, and revised. Work is also well along on staff development training for the prior learning and criterion-relevance variables.

There are substantial experience and data to show that teachers and supervisors can be trained to criterion levels with the printed and video training materials for student engaged time. A continuing validation study has been undertaken to ascertain the degree of agreement between classroom descriptions obtained with the observation system from the Stallings and Kaskowitz study (1974) and the adapted version of that system used in the improvement approach. The data, thus far, have not disclosed any significant difference between descriptions produced with the two systems. After observing the first eleven classrooms during reading/language arts and mathematics periods over two days with instruments from the two systems, the correlation between the measures obtained with the two systems was .92.

Much remains to be done on preparation of training for both the leadership and the four-phase instructional improvement cycle elements of the staff development program. At this point, experience indicates that the orientation materials have effectively aided the formation of collaborative development projects, both those for which RBS was the instigator and those which were initiated by turnkey leaders.

While at this time a data-based evaluation cannot be made of the effectiveness of the improvement cycle method for changing classroom processes, there are signs that changes are happening for some participants in some development projects. Observation data shared with RBS by supervisors and teachers show that student engaged time increases for most classrooms over consecutive observations. Teachers readily explain actions they have taken and which they believe were responsible for observed increases.

Evidence of changes in students' achievement is even more difficult to acquire at this stage of development. However, one school district in Delaware offers what might be considered a precurser experience. According to the superintendent, large increases in achievement have occurred between fall and spring testing for grade levels in which teachers consciously managed student engaged time. These increases are especially impressive because they are increases in percentile ranking--ranging from 10 to 30 percentile ranks. Of course, the superintendent also credits this showing to efforts made by the district to assure criterion relevance of instruction and to remediation of deficiencies in prior learning as well as to a variety of other inservice efforts. It is also the perspective of

RBS is encouraged that, once developed, this research-utilization approach to instructional improvement will be significant from both an educational and technical perspective. First, the approach promises a means of rationally and systematically tying program modification to data-based diagnosis of instructional improvement opportunities as they exist in individual classrooms. Second, widespread development of the approach will demonstrate a way of systematically preparing and transferring into practice the research on classroom instruction. Of particular note will be the use of the research on educational change in conjunction with the research on teaching in a unified approach to instructional improvement. Finally, broad-scale institutionalization of the approach will provide a rich ooportunity for accumulating a wealth of data from a range of classrooms -- across students, subject matters, and grade levels. Not only

will these data fill gaps in current data sets and be more appropriate for the educational systems in which they were collected than are current data, but they may be a means of sharpening and deepening our overall understanding of classroom influences that affect students' achievement.

References

Berliner, D. C., Filby, N. N., Marliave, R. S., Weir, C. D., & Fisher, C. W. Description of classes and plan for an intervention study (Tech. Note VI-1). San Francisco: Far West Laboratory for Educational Research and Development, 1976.

Berman, P., & McLaughlin, M. W. Federal programs supporting educational change, vol. IV: The findings in review. Santa Monica, Calif.: Rand Corporation, 1975.

Berman, P., & Pauly, E. W. Federal programs supporting educational change, vol. II: Factors affecting change agent projects. Santa Monica, Calif.: Rand Corporation, 1975.

Bloom, B. S. Human characteristics and school learning. New York: McGraw-Hill, 1976.

Brophy, J. E., & Evertson, C. M. The Texas Teacher Effectiveness Project: Presentation of non-linear relationships and summary discussion (Report No. 74-6). Austin, Texas: The University of Texas at Austin, Research and Development Center for Teacher Education, September 1974. (ERIC Document Reproduction Service No. ED 009 345).

Center for New Schools. Assistance strategies of six groups that facilitate educational change at the school/community level (3 vols.). Chicago: Center for New Schools, 1977.

Charters, W. W., & Pellegrin, R. Barriers to the innovative process: Four case studies of differentiated staffing. Administrative Science Quarterly, 1973, 9(1), 3-14.

Clifford, G. J. A history of the impact of research on teaching. In R. M. W. Travers (ed.), Second handbook of research on teaching. Chicago: Rand McNally, 1973.

Coker, H. An effectiveness-directed approach to teacher evaluation and certification. Paper presented at a workshop of the American Association of Colleges for Teacher Education, Chicago, February 1978.

Cole, H. Implementation of a process curriculum by the campus team strategy. Syracuse, N.Y.: Eastern Regional Institute for Education, February 1971.

Downey, L., and Associates. The social studies in Alberta--1975. Edmonton, Alberta: L. Downey Research Associates, 1975.

Emrick, J. A., & Peterson, S. M. A synthesis of findings across five recent studies of educational dissemination and change. Unpublished manuscript, 1977.

Fenstermacher, G. D. A philosophical consideration of recent research on teacher effectiveness. In L. S. Shulman (Ed.), Review of Research in Education (Vol. 6). Itasca, Ill.: F. E. Peacock Publishers, 1979.

Fullan, M., & Pomfret, A. Research on curriculum and instruction implementation. Review of Educational Research, 1977, 47 (2), 335-397.

Gage. N. L. The scientific basis of the art of teaching. New York: Teachers College Press, 1978.

Good, T. L. The Missouri Effectiveness Project: A program of naturalistic and experimental research. Paper presented at the annual meeting of the American Educational Research Association, Toronto, March 1978.

Graeber, A. O. A basic skills instructional improvement program: Utilizing research to facilitate implementation and dissemination. Paper presented at the annual meeting of the American Educational Research Association, Boston, April 1980.

Gross, N., Giacquinta, J., & Bernstein, M. Implementing innovations: A sociological analysis of planned educational change. New York: Basic Books, 1971.

Hamingson, D. (Ed.). Toward judgment (publication of the Evaluation Unit of the Humanities Curriculum Project, 1970-72). Norwich, England: University of East Anglia, 1973.

Havelock, R. G. The change agent's guide to innovation in education. Englewood Cliffs, N.J.: Educational Technology Publications, 1973.

Huitt, W. C., & Rim, E.-D. A basic skills instructional improvement program: Utilizing research to improve classroom practices. Paper presented at the annual meeting of the American Educational Research Association, Boston, April 1980.

Jamison, D., Suppes, P., & Wells, S. The effectiveness of alternate instructional media: A survey. Review of Educational Research, 1974, 44 (1), 1-67.

McDonald, F. J. Research and development strategies for improving teacher education. Journal of Teacher Education, November-December 1977, 28 (6), 29-33.

McDonald, F. J., & Elias, P. Beginning Teacher Evaluation Study, Phase III, 1973-74 (Executive Summary Report). Princeton, Educational Testing Service, 1976.

Medley, D. M. Teacher competence and teacher effectiveness: A review of process-product research. Washington, D.C.: American Association of Colleges for Teacher Education, August 1977.

Pincus, J. Incentives for innovation in the public schools. Review of Educational Research, 1974, 44 (1), 113-143.

Pincus, J., & Williams, R. C. Planned change in urban school districts. Phi Delta Kappan, 1979, 60 (10), 729-733.

Rim, E.-D., & Coller, A. R. In search of nonlinear process-product functions in existing schooling effects data: I. A reanalysis of the first grade reading and mathematics data from the Stallings and Kaskowitz Follow Through Study. Philadephia, Pa.: Research for Better Schools, 1978.

Rim, E.-D., & Segars, J. A basic skills instructional improvement program: Evaluation. Unpublished manuscript, 1979.

Rosenshine, B. Classroom instruction. In N. L. Gage (Ed.), The psychology of teaching methods (Seventy-fifth yearbook of the National Society for the Study of Education). Chicago: University of Chicago Press, 1976.

Rosenshine, B., & Berliner, D. C. Academic engaged time. British Journal of Teacher Education, 1978, 4, 3-16.

Rubin, L. (Ed.). Improving in-service education: Proposals and procedures for change. Boston: Allyn and Bacon, 1971.

Rubin, L. (Ed.). The in-service education of teachers: Trends, processes, and prescriptions. Boston: Allyn and Bacon, 1978.

Short, E. C. Knowledge production and utilization in curriculum: A special case of the general phenomenon. Review of Educational Research, Summer 1973, 43 (3).

Sieber, S. D., Louis, K. S., & Metzger, L. The use of educational knowledge: Evaluation of the pilot state dissemination program (2 vols.). New York: Columbia University, Bureau of Applied Research, 1972. (ERIC Document Reproduction Service No. ED 065 739; ED 065 740)

Soar, R. S., & Soar, R. M. Classroom behavior, pupil characteristics, and pupil growth for the school year and summer. Gainesville, Fla.: University of Florida College of Education, 1973.

Soar, R. S., & Soar, R. M. An attempt to identify measures of teacher effectiveness from four studies. Journal of Teacher Education, 1976, 27, 261-267.

State of New Jersey, Department of Education. T&E: A primer for school improvement in New Jersey (Rev. ed.). Trenton: State Department of Education, 1976.

Stearns, M. S., & Norwood, C. R. Evaluation of the field test of project information packages (2 vols.). Menlo Park, Calif.: Stanford Research Institute, 1977.

Wittrock, M. C. The evaluation of instruction: Cause-and-effect relations in naturalistic data. In M. D. Wittrock & D. E. Wiley, (Eds.), The evaluation of instruction: Issues and answers. New York: Holt, Rinehart & Winston, 1970.

Zaltman, G., Florio, D., & Sikorski, L. Dynamic educational change. New York: The Free Press, 1977.